

In the Claims

1-14. (cancelled)

15. (currently amended) A locking system for a safety switch to monitor a protective device on a machine, comprising:

a read head having a first component set with electric structural components coupled to one of the protective device and the machine;

an actuator having a second component set with electric structural components mounted on the other of the protective device and the machine, said first and second components interacting without electrical contact to control the safety switch;

a switchable electromagnet mounted on one of said read head and said actuator and generating a magnetic field;

a counterelement mounted on the other of said read head and said actuator and operable with said electromagnet to lock said actuator on said read head by magnetic attraction of the magnetic field; and

a sensor element controlling a locking force of said actuator and said read head caused by the magnetic field and having an output signal being a function of the magnetic field generated by said electromagnet.

16. (previously presented) A locking system according to claim 15 wherein said sensor element generates an analog output signal being a function of an intensity of the magnetic field generated by said electromagnet.

17. (previously presented) A locking system according to claim 15 wherein magnitudes of said locking force are adjustable.

18. (previously presented) A locking system according to claim 15 wherein said sensor element measures said magnetic field generated by said electromagnet, and, taking into account geometric configurations and magnetic properties of said read head and said actuator, determines therefrom said locking force between said read head and said actuator.

19. (previously presented) A locking system according to claim 15 wherein said sensor element is mounted on said actuator.

20. (previously presented) A locking system according to claim 15 wherein said sensor element is mounted on said read head.

21. (previously presented) A locking system according to claim 15 wherein said sensor element has two switching states as functions of said magnetic field; and said second component set is controlled by said switching states of said sensor element.

22. (previously presented) A locking system according to claim 15 wherein a generator coil is mounted in said actuator to supply electrical energy to said second component set.

23. (previously presented) A locking system according to claim 22 wherein said sensor element is electrically connected in series to said generator coil.

24. (previously presented) A locking system according to claim 15 wherein a plurality of sensor elements are mounted in said actuator and are interconnected to monitor locking.

25. (previously presented) A locking system according to claim 15 wherein said sensor element is mounted by adjusting means to vary positions thereof.

26. (previously presented) A locking system according to claim 15 wherein said sensor element is a read switch.

27. (previously presented) A locking system according to claim 15 wherein said sensor element is a Hall element.

28. (previously presented) A locking system according to claim 15 wherein said electromagnet is rigidly mounted on one of said read head and said actuator;

said counter element is rigidly mounted on the other of said read head and said actuator;

and

a coupling rigidly connects at least one of said counter element and said electromagnet to a base element, while allowing pivoting relative to said base element.